

## WHAT IS CLAIMED IS:

1. A staircase composed of: a pair of right and left stringers composed of truss structural members; and treads,  
5 wherein

the truss structural members are each composed of: an upper chord member and a lower chord member which are inclined with the slope of the staircase; and a plurality of lattice members for linking the upper chord member and the lower chord  
10 member.

2. The staircase according to Claim 1, wherein the truss structural members are linked to each other by treads.

15 3. The staircase according to Claim 1, wherein the plurality of lattice members include a plurality of horizontal lattice members disposed horizontally for each riser, and the treads are supported by the horizontal lattice members.

20 4. The staircase according to claim 1, wherein the truss structural members are linked to each other via a plurality of linking members which are laid horizontally at each riser height, and

the treads are fixedly supported on the linking members.  
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5. The staircase according to Claim 4, wherein the linking members adjacent to each other in the height direction

are linked to each other.

6. The staircase according to anyone of claims 1 through 5, wherein the upper chord member and the lower chord member are each provided with node members, and the lattice members are joined with the node members.

7. The staircase according to claim 6, wherein the node members are column-shaped and each have linking grooves formed on the outer surface thereof;

the lattice members each have linking end parts formed on both ends; and

the linking groove and the linking end parts have notches to be engaged with each other, and nodes are formed by pressing the linking end parts into the linking grooves.

8. The staircase according to Claim 6, wherein at least either the upper chord members or the lower chord members are continued in the direction of the staircase inclination and formed of members having groove parts opened to the lattice member side, and

the node members are attached inside the groove parts.

9. The staircase according to anyone of claims 1 through 5, wherein the truss structural members are each composed of node members each disposed at a node point; and frame members for linking adjacent node members.

10. The staircase according to claim 9, wherein the node members are column-shaped and each have linking grooves on an outer surface thereof;

5 the frame members each have linking end parts on both ends; and

the linking groove and the linking end parts have notches to be engaged with each other, and nodes are formed by press fitting the linking end parts into the linking grooves.

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11. The staircase according to claim 9 further comprising a reinforcing member arranged along at least one of the upper chord member and the lower chord member, the reinforcing member being fixed with at least three or more of  
15 the node members.

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12. The staircase according to anyone of Claims 1 through 5, wherein at least either between the right and left upper chord members or between the right and left lower chord members,  
20 a plate member is attached.

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13. The staircase according to anyone of Claims 1 through 5, further comprising: handrails positioned above the side end parts of the treads, and

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balusters that have lower ends joined with the truss structural members and support the handrails.

14. A staircase comprising: a pair of right and left truss structural members which are inclined with the slope of the staircase and

a plurality of treads disposed between the truss structural members, wherein

each truss structural member is composed of an upper chord member having a plurality of column-shaped upper node members provided in series in the direction of the staircase inclination, a lower chord member having a plurality of column-shaped lower node members provided in series in the direction of the staircase inclination, and lattice members that link the upper chord member and the lower chord member to each other,

each upper node member and each lower node member are disposed so that the axes thereof are orthogonal to the truss plane of the truss structural member, and on the outer circumferential faces thereof, a plurality of linking grooves are formed along the axes, and

the lattice member has flat-shaped linking end parts that can fit into the linking grooves on both ends, one of the linking end parts is fitted into the linking groove of the upper node member, the other one of the linking end parts is fitted into the linking groove of the lower node member, and

the ends of each tread are fixed to the side end face of the upper node member and the side end face of the lower node member.

15. The staircase according to Claim 14, wherein the

upper chord members have upper frame members provided between the upper node members adjacent to each other in the direction of the staircase inclination, and

the upper frame members have, on their both ends, flat-shaped linking end parts that can be fitted into the linking grooves of the upper node members, and the linking end parts are fitted into the linking grooves of the upper node members.

16. The staircase according to Claim 14, wherein the lower chord members have lower frame members disposed between the lower node members adjacent to each other in the direction of the staircase inclination, and the lower frame members have, on their both ends, flat-shaped linking end parts that can be fitted into the linking grooves of the lower node members, and the linking end parts have been fitted into the linking grooves of the lower node members.

17. The staircase according to Claim 14, wherein the upper chord member has an upper through member having a length from the upper end to the lower end of the upper chord member, and the upper through member is attached to the side end faces of the upper node members.

18. The staircase according to Claim 14, wherein the lower chord member has a lower through member having a length from the upper end to the lower end of the lower chord member, and the lower through member is attached to the side end faces

of the lower node members.

19. The staircase according to Claim 14, wherein the upper node members and the lower node members are positioned  
5 at the same heights,

tread receiving members are fixed to the side end faces of the upper node members and the side end faces of the lower node members, and

the treads are fixed to the tread receiving members.

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20. The staircase according to any one of Claims 14 through 19, further comprising: handrails positioned above the side end parts of the treads, and

balusters the lower ends of which are joined to the truss  
15 structural member and supporting the handrails.

21. A staircase in which treads are supported by a space truss structural member inclined with the slope of the staircase, wherein

20 the space truss structural member is formed by linking a plurality of upper chord members linked to each other with a lower chord member located below the midpoint of adjacent ones of the upper chord members via lattice members.

22. The staircase according to Claim 21, wherein the space truss structural member further comprises a second lower chord member below the aforementioned lower chord members, and  
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the lower chord members and the second lower chord member are linked to each other by lattice members.

23. The staircase according to claim 21 or 22, wherein  
5 the upper chord member and the lower chord member are each formed by linking a plurality of frame members via node members.

24. The staircase according to Claim 23, wherein a  
reinforcing member is disposed along at least either one of  
10 the upper chord member or the lower chord member of the space truss structural member, and the reinforcing member is fixed to three or more of successive node members.

25. The staircase according to claim 23, wherein the  
15 lattice members and the frame members each have linking end parts on both ends;

on outer surfaces of the node members are formed linking grooves into which the linking end parts can be fit; and  
the linking end parts are fit into the linking grooves.

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26. The staircase according to claim 25, wherein  
adjacent ones of the upper chord members are linked to each other via linking frame members, and

the linking frame members each have linking end parts  
25 on both ends, the linking end parts being fit into the linking grooves of the node members.

27. The staircase according to Claim 21 or 22, wherein the upper chord members have connection pieces that project toward the lower chord members and

the lower chord members have connection pieces that  
5 project toward the upper chord members,

the lattice members have flat end parts on their both ends, and one of the flat end parts is joined to the connection piece of the upper chord member, and the other flat end part is joined to the connection piece of the lower chord member.

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28. The staircase according to Claim 27, wherein the upper chord members adjacent to each other are linked to each other by the linking frame members,

the linking frame members have flat end parts on both  
15 ends thereof,

each of the upper chord members has a connection piece projecting toward another adjacent upper chord member, and the flat end part of the linking frame member is joined to the connection piece.

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29. The staircase according to claim 26 or 28, wherein the linking frame members include linking diagonal members which are diagonal to each of the upper chord members.

30. The staircase according to Claim 21 or 22, wherein  
25 the upper chord member is formed of a member having a groove part opened at its lower chord member side, where the groove



part houses the node members, and

the lower chord member is formed by linking a plurality of frame members by node members, and

the lattice member and the frame member have linking end  
5 parts on their both ends, and

on the outer faces of the node members, linking grooves into which the linking end parts can fit are formed, and the linking end parts are fitted into the linking grooves.

10 31. The staircase according to claim 21 or 22, wherein adjacent ones of the upper chord members are linked to each other via brackets for supporting the treads.

15 32. The staircase according to Claim 21 or 22, wherein the upper chord members adjacent to each other are linked to each other by a plate member.